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Assistive Technology Assessment

Client:	Jamal Williams
Referral Source:	Grayson Walker, EEOC
SVRI Staff:	Laura E. Plummer, MA, CRC, ATP
	Rehabilitation Technologist / Sensory Specialist
Date:	April 3, 2013

Executive Summary
This assistive technology report will outline the following recommendations:
- ZoomText screen magnifier/reader
- ZoomText keyboard
- 24" monitor
- Time to learn

Referral Reason:
Jamal Williams was referred to the Stout Vocational Rehabilitation Institute (SVRI) by Grayson Walker, trial attorney for the EEOC; Chicago office. The referral reason was to conduct an assistive technology assessment to determine if he would have been able to perform certain job duties had accommodations been provided on the job. The compensation to be paid for this assessment is $119 per hour.

Background Information:
Mr. Williams reports that he has been legally blind all of his life. He describes difficulty with seeing fine print and viewing things at a distance. He does not drive a car and relies upon public transportation. He reports his last eye exam was in 2012.

In 2008 Mr. Williams began an Amount Keying position at a local branch of a national bank which involved completing data entry on check amounts read from scanned images.

The Amount Keying job duties included the following:
- Reading of scanned images on the computer screen
- Entering the dollar amounts shown on the scanned images
- Determining if a scanned document is accepted and the amount is entered or if an amount or document should be rejected

Assessment:
Initial contact with Mr. Williams was facilitated through Mr. Walker and a telephone interview was conducted on December 18, 2012. Background information was obtained from Mr. Williams related to his personal history of vision loss and his experience with assistive technology. A summary of this phone call is below:

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Mr. Williams reports that he does not utilize corrective lenses. His experience with assistive technology is outlined below:

- Handheld Magnification – he has utilized handheld magnifiers in the past but does not use any devices at this time. He was unsure of the magnification levels he has used in the past.
- Screen Magnification – Mr. Williams reports receiving a computer with ZoomText, a screen magnifier/reader software program (described in detail below) sometime in the past year or two.
- Larger Monitors – Mr. Williams utilizes larger, widescreen monitors whenever possible. He was unsure about specific sizes used but believes 24" monitors work well for him. The current model of his monitor at home is a 24 inch Acer S240HL LED unit.
- Electronic Magnification – Mr. Williams recently acquired a Ruby, handheld electronic magnifier. This was his first exposure to this type of technology and he was unsure of when he received the device. The Ruby is a small, handheld electronic magnifier which utilizes a camera and LCD screen. It is used to display written materials and offers the user a variety of magnification, brightness and contrast levels. An image of a version of the Ruby is shown below for informational purposes only:

The assistive technology assessment took place at the University of Illinois – Chicago (UIC) in Chicago, IL on the afternoon of January 23, 2013. Computer access was the primary area assessed. Methods used were discussion, observation, demonstration and trial.

Computer Access
During the meeting in person at UIC, Mr. Williams was asked to demonstrate his ability to access a desktop computer provided by UIC. This computer was connected to a standard black keyboard and mouse. The monitor used was a 24" widescreen model. He was observed performing an internet search, instant messaging and using Facebook. The distance which Mr. Jamal's face was from the screen, using a standard font size, was approximately 4 inches.

Mr. Williams was provided with the opportunity to try ZoomText, a screen magnification and reader software program. ZoomText provides the following features on a Windows based computer. The version trialed was 9.1, which was the version available in 2008. The product description, provided by the software developer follows:

About ZoomText 9.1
ZoomText 9.1 is a powerful computer access solution designed for the visually-impaired. Consisting of two adaptive technologies – screen magnification and screen reading – ZoomText allows you to see and hear everything on the computer screen, providing complete access to applications, documents, email and the Internet.

ZoomText 9.1 is available in two product versions:
Magnifier – a standalone screen magnifier.
Magnifier/Reader – an integrated magnifier and screen reader.

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Both versions of ZoomText 9.1 are designed for users of all ages and skill levels. With a precise mix of power and simplicity, ZoomText provides total independence at home, school and in the workplace.

ZoomText 9.1 features include:
- Magnification from 1X – 36X
- Color, cursor and pointer enhancements to increase visibility
- Zoom windows: lens, line, docked (4 options), overview, full and full with freeze
- Focus enhancements: make it easy to locate and follow the control focus when you tab and arrow key through menus, dialogs, toolbars, and other application controls. You can choose from preset focus schemes or configure your own custom focus settings
- Typing echo: Each key or word that you type is automatically spoken. You can choose to have all keys spoken or only selected groups of keys.
- Mouse echo: automatically reads text that you point to. Single words or complete lines of text are spoken instantly or after hovering briefly.

Mr. Williams was observed completing the same tasks outlined above on the computer using ZoomText. The use of ZoomText allowed him to increase the distance he was able to see information on the screen:
1.25X = 12" distance
2X = 18" distance
3X = 18" distance

Magnification greater than 3X was not utilized per feedback from Mr. Williams. Magnification greater than 3X also requires greater scrolling by the user to access all areas of the screen. Additional features of ZoomText trialed during this assessment included cursor and mouse enhancements. Mr. Williams reported that the standard mouse and cursor images met his needs at this time.

Mr. Williams reports being accustomed to sitting very close to the computer screen due to the lack of owning a screen magnification or reading software program. He is aware that this has become a habit and with the use of software such as ZoomText he would need to learn that he could sit further from the computer monitor.

The use of a larger computer monitor, 24" widescreen, would provide adequate screen size for Mr. Williams while also reducing the amount of magnification and scrolling necessary through the use of ZoomText.

Prior to the assessment, SVRI was provided with a copy of the data entry training program utilized for the Amount Keying position. This program was loaded onto the computer utilized for the trial of ZoomText. Mr. Williams was then asked to complete the examples of data entry functions using the ZoomText program. Following a brief period of learning he was observed to successfully complete the data entry tasks using a magnification level between 1.5X – 3X. This brief learning period allowed Mr. Williams to familiarize himself with the screen layout, text entry fields and selection buttons. Once he had the opportunity to familiarize himself with the program layout he performed the training tasks more efficiently. Specific speed measurements were not taken.

The Amount Keying data entry program incorporates an image boost function within it, however the image boost presents limitations at to functionality:
- The image boost function is activated by pressing two key commands
- The image boost function only provides a small degree of increased size (approximately 1-2X)
- The image boost function, when activated, will only increase the size for one check image and when the computer operator advances to the next image it returns to standard size.

Mr. Williams demonstrated solid keyboarding skills and knowledge of key locations. The visibility of the keyboard available at the worksite will be discussed further in the subsequent section.

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Worksite Assessment

A worksite review was completed on January 24, 2013 in Chicago, IL. The areas assessed included the work station and keyboard access. Methods used were discussion and observation.

The work station consisted of an average sized cubicle, similar in size to a library carrel. The lighting overhead was florescent and there was an entire wall of windows. Window shades were present and adjustable by employees.   Photos were taken of the work place for reference in the writing of this report.

The computer station consisted of a desktop computer, almond colored keyboard with label inserts and a 20" flat screen monitor; a Dell 2000FP. Photos are included below for reference. The keyboard was equipped with label inserts that marked the specialized functions. It is my understanding that an average keyboard was utilized and that macros command were written into the software that changed the key function from what it normally does to the specific function needed for the Amount Keying program commands. These would include the Reject, Recall and Repeat functions. It was observed that the lighting within the work place created glare upon the keyboard and specialty key commands which were printed on the blue overlays within the keyboard itself.

Maria Rosario, operations manager, reported that all efforts are made to set an employee up at a specific workstation and continue to place them in that same workstation for subsequent shifts. This would allow for workplace modifications for Mr. Williams that would not need to be reset or set up for him specifically at each shift.

Worksite Technology

Mr. Williams' job duties did not require that he view printed materials so the focus of vision loss technology was specific to the work station. Observation of the workplace was conducted which included the computer monitor, keyboard and lighting within the work space. The lighting consists of overhead florescent lighting which creates a glare upon the keyboard. As noted above, the data entry program includes unique functions which are accessed using designated keys on the keyboard. It was observed that the keyboards being utilized are older, almond color models. It was observed that at least one work station had a newer, black keyboard with standard keys. Mr. Williams would have realized significant glare when utilizing the almond keyboards that were in use in 2008.
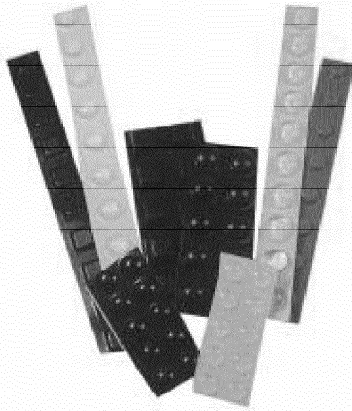
Worksite solutions would include a ZoomText keyboard and the use of bump dots. The ZoomText keyboard is a black keyboard with clear, white lettering. It includes shortcut keys for all of the primary functions of the ZoomText software program and it includes the ability to accept macros for specialty keys. The shortcut keys are important as they allow quick modifications to magnification levels and visual enhancements which a user otherwise would need to navigate to a toolbar to operate.

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ZoomText Keyboard

Bump Dots

The use of bump dots which are small, stick-on tactile indicators on the specialty keys would provide a non-visual means for Mr. Williams to ensure he was on the correct key (reject or recall for example).

Mr. Williams has reported that a 24" monitor provides him greater access to images viewed on a computer screen. The inclusion of a 24" monitor within the worksite would meet this need.

Recommendations:
The following assistive technology solutions would have provided Mr. Williams with the access necessary to perform the Amount Keying job duties

- ZoomText Magnifier/Reader software program
- ZoomText Keyboard
- Bump Dots
- Training Time to learn the functions of the program

Typical costs of these recommendations are outlined below:

Recommendations	
ZoomText Software	$695.95
ZoomText Keyboard	$99.95
24" Monitor	$199.95
Bump Dots	$20.00
Shipping	$25.00
Total	**$1,040.85**

The final recommendation relates to the time needed for Mr. Williams to familiarize himself with the program functions and navigation. As noted during the assessment with him, if he is provided time to familiarize himself with the layout of a program he is able to perform the functions as efficiently as possible.

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Thank you for the opportunity to work with Mr. Williams, if you should have any questions please do not hesitate to contact me at 715-232-3300 or via email at plummerl@uwstout.edu

Sincerely,

Laura E. Plummer, MA, CRC, ATP
Rehabilitation Technologist / Sensory Specialist

Attachment: Resume

LAURA E. PLUMMER, MA, CRC, ATP
4869 Shellamie Drive
Eau Claire, Wisconsin 54701
715.563.0070
jlplummer97@hotmail.com

SUMMARY OF QUALIFICATIONS
Certified Rehabilitation Counselor and Assistive Technology Practitioner, eighteen years of assistive technology service provision to consumers with disabilities, experienced public speaker, and in-depth knowledge of community resources. Proven to be detail oriented and organized, with a strong work ethic.

EDUCATION / CERTIFICATION
Assistive Technology Practitioner (ATP) – *October, 2006 - Present*
Certified Rehabilitation Counselor (CRC) - *June, 1992 - Present*
Deaf-Blind Graduate Certificate – Northern Illinios University; *January, 1996*

Northern Illinois University - DeKalb, IL
Master of Arts Degree: Communicative Disorders - *May, 1992*
Emphasis: Deafness Rehabilitation Counseling

Northern Illinois University - DeKalb, IL
Bachelor of Science Degree: Communicative Disorders - *August, 1990*
Emphasis: Deafness Rehabilitation Counseling

University of Wisconsin - Whitewater, WI
Undergraduate Study: Special Education and Spanish - *1986 - 1988*

PROFESSIONAL EMPLOYMENT

Stout Vocational Rehabilitation Institute – Menomonie, Wisconsin
    Wistech Director: *January, 2011 to Present*
    • Programmatic oversight of the Federal AT Act Grant for the State of Wisconsin
    Senior Rehabilitation Technologist / Sensory Specialiast: *May, 2007 – Present*
    • Completion of assistive technology assessments and implementations
    • Consultant within the department on sensory assistive technology
    • Asstistive Technology Resource Center website coordinator
    • Development and implementation of statewide assistive technology trainings
    • Supervision and guidance of graduate and undergraduate students

    Online Course Facilitator and Developer: *February 2006 - Present*
    • Course - CRC Preparation
    • Course - Apples to Androids: Using Cool Technology to Create Consumer Buy-In
    • Course – AT and Ethics (in development)

Center for Independent Living for Western Wisconsin – Menomonie, Wisconsin
    Resource Counselor: *June, 1992 – April, 2007*
    • Provision of independent living services for a cross disability caseload
    • Serving as specialist in deafness, hearing loss, and deaf-blindness
    • Supervision and guidance of graduate and undergraduate students
    • Extensive experience with community awareness and public education trainings
    • Conduct Assistive Technology assessments and implementations
    • Organization and implementation of the Universal Service Fund's Non-Profit Access Grant for three years
    • Website developer
    • WisLoan Counselor

LAURA E. PLUMMER (resume page 2)

Independence First - Milwaukee, Wisconsin
    Research Consultant: *February, 1992 - June, 1992*
    • Compilation of data for WisTech Needs Assessment and Public Forums

    Independent Living Coordinator (Intern): *January, 1992 - April, 1992*
    • Coordination and provision of independent living services

Northern Illinois University - DeKalb, Illinois
    Graduate Assistant - *August, 1990 - May, 1992*
    • Research Assistant
    • Teaching Assistant for American Sign Language Course

PROFESSIONAL ACTIVITIES AND HONORS

Board Member:	Community Health Partnership Board of Directors *(2001 – Present);* Board President *(2007 – 2011)*
Guest Lecturer:	Institute on Deafness, Northern Illinois University *(1997 – 2009)*
Board Member:	Senior Citizens Employment and Training Board of Directors *(1999 – 2005)*

REFERENCES
Available upon request

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